

BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Engineering Pearson BTEC International Level 3 Foundation Diploma in Engineering Pearson BTEC International Level 3 Diploma in Engineering Pearson BTEC International Level 3 Diploma in Mechanical Engineering Pearson BTEC International Level 3 Diploma in Digital Engineering Pearson BTEC International Level 3 Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Diploma in Aeronautical Engineering Pearson BTEC International Level 3 Extended Diploma in Engineering Pearson BTEC International Level 3 Extended Diploma in Mechanical Engineering Pearson BTEC International Level 3 Extended Diploma in Digital Engineering Pearson BTEC International Level 3 Extended Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Extended Diploma in Aeronautical Engineering
Unit number and title	Unit 11: Engineering Maintenance and Condition Monitoring Techniques
Learning aim(s)	A: Examine the characteristics of different types of engineering maintenance required for engineered plant and equipment to operate safely
Assignment title	Types of Engineering Maintenance
Assessor	
Issue date	
Hand in deadline	
Vocational Scenario or Context	You are working as a trainee maintenance technician for an engineering organisation that manufactures a range of household appliances using both manual and CNC machinery. Your job includes maintaining a range of different pieces of machinery. Your supervisor is pleased with your work, and your enthusiasm for working on maintenance activities and wants to support you gaining an understanding about the types of maintenance and the reasons for carrying out maintenance. Your supervisor has asked you to investigate a range of different types of maintenance, the cost of maintenance and the reasons for maintenance.
Task 1	You are going to investigate types of maintenance and common



	techniques used for maintenance. As part of your investigation you will also need to consider the costs of maintenance and the reasons for carrying out maintenance. To do this: You need to research at least three different types of maintenance used in engineering. You should use this research to produce a report that includes information about three different types of maintenance. These should be sufficiently different to allow you draw conclusions about the suitability of processes for an identified situation. For each of the three maintenance techniques you evaluate, you will need to include information about: ● The techniques used to complete the maintenance activity, including information about what the maintenance involves, the frequency of maintenance and the reasons why that type of maintenance is suitable for the identified engineering plant and equipment. ● The cost considerations for the maintenance activity. You will need to consider the cost of maintenance as a proportion of expenditure, the costs of direct and indirect labour, spares and consumables. You also need to consider the cost of hiring and replacing equipment, or using outside contractors as well as the cost of lost output. Further costs associated with health and safety and the environment need to be considered along with the benefits that result from completing maintenance, and their impact upon profitability of maintenance activities. ● The reasons for carrying out specific types of engineering maintenance for the identified engineering plant and equipment. You will also need to: Produce a summary evaluation that justifies each of the three types of maintenance used with reference to the continued operation of engineering plant and equipment.
Checklist of evidence required	A report on the use of three different types of maintenance as they are applied to items of engineered plant or equipment.



Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
11/A.D1	Evaluate, using language that is technically correct and of a high standard, the characteristics and suitability of three different types of maintenance used for the continued operation of plant and equipment.
11/A.M1	Compare, using examples, the characteristics and suitability of three different types of maintenance used for the continued operation of plant and equipment.
11/A.P1	Explain, using examples, the characteristics of and reasons why three different types of maintenance are used for the continued operation of plant and equipment.
Sources of information to support you with this Assignment	Books Mobley R Keith – Maintenance Engineering Handbook, 8th edition (McGrawHill Professional, 2014) ISBN 9780071826617. Richardson D – Plant Equipment and Maintenance Engineering Handbook (McGraw-Hill Professional, 2013) ISBN 9780071809894. Levitt J – The Handbook of Maintenance Management, 2nd edition (Industrial Press, Inc., 2010) ISBN 9780831133894 Websites iso.org/iso-45001-occupational-health-and-safety.html hse.gov.uk sciencedirect.com lifetime-reliability.com maintenanceonline.co.uk plantengineering.com Above are some examples of websites. Further useful resources may be found at qualifications.pearson.com/en/support/published-resources.html#step1